THEORETICAL AND METHODOLOGICAL PRINCIPLES OF FORMING THE AGRARIAN INSURANCE MARKET IN UKRAINE

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Riskiness in agrarian production calls forth the necessity of well-timed localization and effective neutralization of the phenomena and processes that negatively affect the process of agricultural production. The paper grounds the expediency of developing an insurance system as an efficient instrument of risk management in the agrarian sphere. The purposes of this article is the substantiation of theoretical and methodological approaches and the application of present-day methodology of forming the agrarian insurance market in Ukraine for providing effective insurance protection and creating favourable business environment in the agrarian sphere. The trends of the development of the domestic agrarian insurance market in 2005–2013 point out the necessity of intensifying research activity concerning the optimization of the forms and methods of innovative insurance protection of agrarians. The realization of the potential of the agrarian insurance development in Ukraine will make it possible to essentially reduce the negative effect of risks on agricultural production and ensure the minimization of fluctuations in revenues of agrarians.

Key words: agrarian insurance; insurance market; insurance products; insurance space; risk management.
JEL codes: G15, G22, Q13, Q14.

1. Introduction

The realization of Euro integration aspirations of our country depends on the speed and quality and transformation and innovation processes in the national economy, especially in the agrarian sphere. As is well known, Ukraine occupies one of the leading places among the European Union countries as to the potential for manufacturing and selling agricultural products at the domestic and foreign markets. An objective factor of present-day land use is the presence of various risks (natural and climatic, technological, anthropogenic, radiation, etc.), the rise of which may essentially slow down the rate and scale of agrarian production.

A notable contribution to the development of present-day theory and methodology of insurance market has been made by some Ukrainian scientists such as V. Bazylevych (1998), O. Kozmenko (2006), S. Navrotsky (2004). Thus, Professor V. Bazylevych in the first domestic monograph on insurance matters titled ‘Insurance Market of Ukraine’ has formulated the economic character of the necessity for insurance, determined the mechanism of realizing economic interests of an insurer and an insurant as well as the system of economic categories that characterize the complex
of insurance space of market economy. O. Kozmenko for the first time in scientific literature considers the concept of insurance market as one of the links of the general economic mechanism of realizing the steady development of the society, which secures the stable functioning of economic entities under the conditions of uncertainty and risk as well as equips authorized bodies with instruments of insurance policy. The scientific contribution made by S. Navrotsky lies in the grounding of forms and methods of insurance protection in agriculture, including the formation of methodological regulations, introduction of standard insurance products, bank insurance, financial bonds and derivative insurance instruments. The scientific research presented has become a notable contribution to the development of agrarian insurance science. However, the ever-growing demand for insurance protection among agrarians calls forth the necessity for substantial and consistent research aimed at the formation and functioning of Ukraine’s insurance market in the context of the development of the European and global insurance space.

The problem of the research is the formation of business economic relations concerning the distribution of agricultural risks among participants of the agrarian insurance market. In this context, the purpose of the research is the grounding of conceptual approaches to the functioning of the agrarian insurance market in Ukraine.

The object of the research is theoretical and methodological approaches to the formation of the agrarian insurance market and assessment of its functioning in Ukraine.

In the process of scientific perception we have used a complex of methods, means, approaches and modes of scientific analysis. The period of the research amounted to nine years (2005–2013). This span of time is characterized by substantial cyclic fluctuations, which is connected with socioeconomic and financial transformations in the national economy. The necessary volume of information was formed by the results of the activity of 18 insurance companies in Ukraine. The results of the research are based on the necessity of achieving the criterion of expected benefit for the subjects of the agrarian insurance market.

The investigation of the trends of the agrarian insurance market development was conducted by the method of analysis and synthesis. The application of the statistical-and economic method, in particular its technique of comparison, made it possible to specify the influence of the main indicators of the agrarian insurance market development on the level of insurance protection of agricultural producers. The employment of the analytical, abstract-and-logical, graphic and monographic methods served for the substantiation of the theoretical and methodological aspects of the research, conclusions and prospects for further studies.

2. Genesis of the formation and development of the insurance theory

It is a historically known fact that the first organizational and legal forms of the activity of insurance agents were mutual insurance societies. The first insurance society was founded in Iceland in the 12th century. Well-to-do peasants united into fel-
lowships for the mutual protection from losses in case of fire or livestock death. Starting from 1770 in France and from 1797 in Germany, associations of mutual insurance began their activities. Since then, practically in all economically developed countries of the world there function various insurance patterns, the most widespread of them being crop insurance, income insurance as well as income stabilization programs (Bakushayeva, 2004).

From the second half of the 19th century many European countries saw the active development of insurance science; societies which dealt with the development of insurance theory were widely spread; there appeared specialized educational institutions in which insurance subjects were taught. In 1906 the first scientific work devoted to problems of private and commercial insurance under the general title ‘Principles of Insurance Business’ by a German scientist A. Manes was published in Germany. Studying the place and role of insurance in the system of economic knowledge, he pointed out that the science about national economy or political economy starts from the moment when man gets resources necessary for material well-being and begins to use them. In this general science, insurance must occupy a prominent place, since by all of its classes this mechanism is a convenient and highly expedient means of promoting the human material welfare (Manes, 1992).

An outstanding contribution to the All-European insurance science has been made by a prominent Ukrainian scientist Academician K. Voblyi who defines insurance as a kind of economic activity based on solidarity for future losses or the necessity stipulated by the onset of a random and at the same time statistically perceptible event. The scholar connects insurance with other economic phenomena and points out that insurance is an important national economic institution that occupies its special place in social economy and strongly influences various aspects of economic life (Voblyi, 1915). Scientific practical experience of the theory and methodology of insurance of the late 19th-early 20th centuries has become a necessary basis for its further development, including agricultural insurance.

3. Methodical of the organization of insurance activity in the agrarian sphere

The application of methodical of the organization of insurance activity in the agrarian sphere provides for the necessity of revealing insurance as an instrument of the distribution of risks between an insurer and an insurant with the purpose of their localization and neutralization in case of the onset of an insurance event. The dominant of insurance relations lies in the fact that an insurer while accumulating insurance premiums from a considerable amount of insurers must have financial and economic potentialities for risk coverage (compensation for losses) to individual insurants in accordance with the insurance contract requirements. The insurance mechanism is based on the collection of the necessary information on the frequency and scale of probable losses. An insurer uses this information for the assessment of insurance premium ($IP$) at the level which makes it possible to form insurance sums ($\Sigma IP$),
make insurance payments \((IP_{payments})\), cover administrative expenses \((AE)\) and get a profit \((P)\). 

\[
\sum IP = IP_{payments} + AE + P, \tag{1}
\]

Insurance as an instrument of risk distribution is based on the phenomenon of risk aversion. This means for an insurant to cover risks by insurance so that their possible negative effect did not influence financial and economic results of the activity of agrarians, and for insurers it means to form the necessary volume of technical reserves for the purpose of making necessary payments of insurance compensation as well as ensuring an acceptable level of financial solvency, liquidity and profitability of an insurance company. This interrelation has found its reflection when realizing the known principle of useful anticipation which for the first time was formulated by a German scholar D. Bernulli (1954) and continued by J. Neuman and O. Morgenstern (1970). According to the principle of useful anticipation, there exists a strictly increasing function which is expressed in monetary form. This function makes it possible to assess and range possible alternatives owing to the fact that the utility of each of them is estimated by the unified preference scale. The criterion is incidentally an expected value of utility that is determined as follows:

\[
E_U(a_i) = \sum p_j u(x_{ij}), \tag{2}
\]

where: \(E_U\) – expected utility; \((a_i)\) – the i-th alternative; \((x_{ij})\) – of the j-th result under the i-th alternative; \(p_j\) – probability of the j-th result.

The realization of the criterion of expected utility means the balancing of interests and potentialities of all the subjects of the agrarian insurance market. The expected utility in agrarian insurance lies in: ensuring the equivalence of insurance interests between the subjects of insurance; expansion of insurance coverage; improvement in the quality of rendering insurance services; increase in the level of insurance protection of agrarians; growth of capitalization of insures, etc.

4. Methodology of the research into agrarian insurance

A generally recognized fact is that agrarian insurance is considered as one of the most complex and hard-to-predict risky insurances (other classes than life insurance), since in this case biological objects in the process of their development are being insured. Thus, when farm crops are insured sprouts are accepted for insurance as well. In other words, those plants are insured which are to secure a certain amount of yield that will be harvested in the form specified in advance, as well as in the fixed state before the termination of an insurance period.

Methodologically agrarian insurance is first of all considered as a system of economic relations between specific economic entities where on the one hand are in-
surers – financial institutions, and on the other hand are insurants – agricultural enterprises, leaseholders, peasant (private) farms which at a definite price turn over their risks of financial and property losses in agricultural activity for the purpose of getting compensation with the coming of the insured event. Agricultural insurance is characterized by its complexity, as it includes insurance of crop yields and perennial plantations, animals, machinery, buildings, transport vehicles, seeds, finished products, commodity producer’s liability, etc. They differ from other objects of property insurance by their connection with wildlife. Though animals belong to the property category, they are in essence living creatures. Farm crops are also sowings only because of their biological connection with land (Lobova, 2011).

Insurance companies have worked out quite a wide range of insurance products that are offered to agrarians. When insuring farm crops, it is accepted to divide insurance products available into classical ones, which are based on the estimate of losses, and index products, that is those which are qualified with the aid of specific indexes (Fig.1). This distribution is stipulated by the necessity to diversify variations of giving insurance protection to agrarians, proceeding from their financial and economic potentialities as well as real insurance requirements.

Fig. 1. Classical and index insurance products on the agrarian insurance market

The use of classical insurance products by agrarians gives extensive opportunities as to coverage of risks (from 1 to 15), in case of which the insurant may insure farm crops as well as receive from minimum to maximum possible insurance protection, which guarantees securing property interests in case of the onset of insurance events. At the same time, classical insurance products are not deprived of some drawbacks, namely: quite a high cost of insurance, especially multirisk one; complexity of risk estimate; the presence of information asymmetry problems, etc. Still more attention is paid to index insurance products by theoreticians and practical workers in the field of agrarian insurance. Their advantage is that insurance becomes more transparent and understandable to insurants, and possibilities appear to reduce its cost as well as create more perfect information bases and systems for measuring risks.

To ensure methodological coordination as to the efficiency of the insurance system functioning in the agrarian sphere, it is necessary to observe the following criteria: transparency and trust between agrarian insurance subjects; accessibility of insurance services by price to agricultural producers as well as its groundness from a standpoint of available risks; economic interest of insurance companies in rendering insurance services to agrarians with the level of riskiness of the given insurance seg-
ment taken into account; parity between voluntary and compulsory forms of insurance; rational application of budgetary funds earmarked for subsidizing insurance premiums to agrarians.

5. Development of the agrarian insurance market in Ukraine in the context of the formation of the All-European and global insurance space

Modern global trends testify to the fact that the agrarian insurance market is an integral part of the global market. According to the Agribusiness Development Project of the International Finance Corporation (IFC), the level of the global market capitalization amounts to 7.1 bil US dollars. In the context of agrarian insurance classes 50 per cent of the specified insurance market falls on multirisk yield insurance; 22 per cent is occupied by the sector of insurance against hail; 17 per cent is formed by complex insurance of farming enterprises and 11 percent of the global market is taken by farm animals (Gudyma, 2011). By intercontinental distribution more than half of agrarian insurance business is in North America (56 per cent of all insurance payments), 25 per cent is in Asian countries, 14 per cent – in European countries, 3 per cent – in Latin America and 1 per cent falls on African countries, Australia and New Zealand (Maureder, 2013).

In many countries of the world insurance is considered as one of the main lines of the state policy in the agrarian sector. In this aspect quite a high level both in methodological and in normative-and-legal respects has been reached. The most developed agrarian insurance markets function in Spain, the USA and Canada.

The principal subjects of the agrarian insurance market in Spain are Government Agrarian Insurance Agency with the Ministry of Agriculture (ENESA), Consortium of Insurance Compensation and Central Insurance Administration with the Ministry of Economics, insurance agrarian pool (33 insurance companies), Federation of Agricultural Cooperatives (4,195 cooperatives) (Fisun, 2011). Characteristic features of the Spanish agrarian insurance market are voluntary character, risk coverage by private insurance companies and active government support for this segment of market relations.

Insurance business in the USA is globally unrivalled by its scope. American insurance companies control approximately 50 per cent of the whole insurance market of industrially developed countries of the world (the insurance industry in the USA is the only one that does not fall within antimonopoly legislation) (Kamalyan, 2005). The American agrarian insurance market realizes almost 20 insurance programs, the main of them being Multiple Insurance Program (APH), Multirisk Profit Protection Program (GRIP), Program of Insurance Against Catastrophe Losses (GRP), Rain Index Program (RAINF), Income Stabilization Program (PRV), (Lobova, 2011). The diversity of insurance programs gives agrarians an opportunity to cover risks connected with the decline in yield and protect themselves from the drop in market prices for manufactured goods.
Canada plays an important role on the world insurance agricultural market. The specialized “Royal Corporations” with the status of the state companies are the main providers of insurance services to the market. The agricultural insurance market in Canada is characterized by two main features: 1) a significant participation of the government in the insurance and credit programs for farmers; 2) an integrated approach to risk management in the agriculture (Matvienko, 2011).

For instance, in such countries as Spain, the USA and Canada farmers insure from 55% to 90% of their crops. In Ukraine this figure is less than 5%. At the same time, according to the experts’ evaluation, the capacity of the Ukrainian agricultural insurance market is assessed within 80–100 million dollars per year just for the insurance of grain (Roche, 2013).

Investigation of the main agricultural insurance figures in Ukraine through 2005–2013 shows the cyclical nature of its development (Table 1). Thus, the sustainable growth took place in the course of 2005–2008, when we can observe the increase: in the number of insurance agreements for 727 units; in the total area of the crop insurance for 781 hectares; in premium amount for rendered insurance services for 27 million dollars. The state subsidy of insurance premium for the cover of the agricultural risks advanced the agricultural insurance market activation in the researched period.

Table 1. Development Trends of Agricultural insurance in Ukraine in the course of 2005–2013

<table>
<thead>
<tr>
<th>Figures</th>
<th>Period</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>2005</td>
</tr>
<tr>
<td>Number of contracts</td>
<td>910</td>
</tr>
<tr>
<td>Insured area, ha</td>
<td>390</td>
</tr>
<tr>
<td>Premiums, $</td>
<td>2.5</td>
</tr>
<tr>
<td>The state subsidy, million $</td>
<td>1.1</td>
</tr>
<tr>
<td>The average premium rate, %</td>
<td>3.79</td>
</tr>
<tr>
<td>The level of payments, %</td>
<td>–</td>
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</tbody>
</table>

Source: Calculated according to the National Commission for Regulation of Financial Services Markets. – http://www.dfp.gov.ua

The national agricultural insurance market experienced negative changes during the financial crisis (2008–2010). The minor amounts of crop insurance in 2009–2010 are explained by the lack of financial resources for the agricultural producers. Subject to termination of the financial state agricultural insurance support, insurers have not received premiums according to insurance harvest crops agreements. This has led to a reduction of the insurance coverage to 20–30% (Shinkarenko, 2013).

Since 2011, there has been a significant revival of the agricultural insurance market. The insurance companies operating in the insurance market of agricultural products received 17.1 million dollars. This figure is almost twice larger than in 2010. Unfortunately, this positive dynamics of the agricultural insurance market in 2011 was not the same in 2012. In 2013, we could observe a slight increase in the
basic figures in comparison with 2011 and 2012 years. Thus, the amount of the insured areas was the highest for the last 5 years (879 thousand, ha). This figure has increased to 18% or 152 hectares as compared to 2012 (Shinkarenko, 2014).

To reflect the actual state of the agricultural insurance development in Ukraine it is necessary to analyze the basic figures of insurance contracts in the terms of crop species listed in Table 2.

Table 2. The Basic Indicators of Insurance Contracts in the Terms of Crop Species in Spring-Summer Period in 2013

<table>
<thead>
<tr>
<th>Crop Species</th>
<th>Number of Contracts</th>
<th>General Area, ha</th>
<th>Insurance Coverage, $</th>
<th>Premium amount, $</th>
<th>Announced losses</th>
<th>Damaged area, ha</th>
<th>Sum of payments, $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter Wheat</td>
<td>555</td>
<td>312169</td>
<td>229004177</td>
<td>7470815</td>
<td>41</td>
<td>20811</td>
<td>800675</td>
</tr>
<tr>
<td>Winter Barley</td>
<td>51</td>
<td>15508</td>
<td>10007858</td>
<td>347488</td>
<td>5</td>
<td>1056</td>
<td>127847</td>
</tr>
<tr>
<td>Winter Rye</td>
<td>59</td>
<td>18236</td>
<td>12854619</td>
<td>470237</td>
<td>3</td>
<td>1306</td>
<td>3547</td>
</tr>
<tr>
<td>Spring Barley</td>
<td>11</td>
<td>2389</td>
<td>355687</td>
<td>16091</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sugar beet</td>
<td>44</td>
<td>16558</td>
<td>30781533</td>
<td>697591</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sunflower</td>
<td>62</td>
<td>42347</td>
<td>17184006</td>
<td>105726</td>
<td>1</td>
<td>530</td>
<td>501</td>
</tr>
<tr>
<td>Maize</td>
<td>380</td>
<td>176446</td>
<td>155016207</td>
<td>4244539</td>
<td>13</td>
<td>2216</td>
<td>41265</td>
</tr>
</tbody>
</table>

Source: Calculated according to the National Commission for Regulation of Financial Services Markets. – http://www.dfp.gov.ua

The main insured crops were winter wheat and maize in the spring-summer period. These cultures were considered to be key objects of forward purchases of the agricultural fund. That caused their significant advantage in the overall volume of crops which were covered by insurance in 2013. The amount of received insurance premiums for winter crops was 13.5 million $, which was higher than in 2012 and increased up to 12% (12,22 million $). The average premium rate was 2,9% in the spring-summer period of 2013, which was lower than the same figure in 2012 (3,19%) (Roche, 2013).

The functionality and efficiency of the agricultural insurance market is largely dependent on the level of the management of the business process which occurs in an insurance company. Balancing different interests between parts of the insurance process makes the insurers to use modern management tools aimed at achieving the goals. The main objectives of innovation management by the insurance company is the transition to a customer-oriented organizational structures, and the formalization of business processes (underwriting risk, development and implementation of innovative insurance products, the expansion of property liability insurer at constant rates, managing the liquidity and solvency of the insurer, reinsurance, etc.) and introducing a system of control and quality management services in accordance with international quality standard ISO 9001-2000. Strategic management of the insurance company is synonymous with providing the highest possible insurance protection to farmers and ensuring their economic well-being within the current insurance contract.
The novelty of the presented research lies in the theoretical and methodological substantiation of the conceptual principles of the agrarian insurance market development in Ukraine. The revealed trends of this segment of market relations testify to the necessity of meeting the agrarians’ demand with qualitative insurance products, which by their quantitative and qualitative characteristics would maximally answer insurance interests of an insurer and an insurant.

6. Conclusions and recommendations for further research

While forming the scientific standpoint of view about researched problem it is necessary to state the following:

1. The experience of functioning of the agricultural insurance in the European Union and other countries has a long history with their traditions and customs. Certainly, this fact gives an opportunity to investigate the current global agricultural insurance market as a deeply integrated infrastructural element in economic and social life processes of the rural people. Thus, theoretical and methodological developments of the foreign colleagues are very important and valuable for the development of the Ukrainian agricultural insurance market.

2. Studies of the current state and identification of existing trends of the agricultural insurance market development in Ukraine demonstrate that farmers are interested in getting the proper insurance coverage, and the insurers have rather strong interest in the implementation of insurance services in this market segment. At the same time, there is a need for organizational, legal and institutional support processes related to the professional activities of market participants, accordingly to the current EU Directive in the field of insurance.

3. The introduction of modern management techniques is the topical issues for the national agricultural insurance market. There is a need to develop and use system forming business processes of insurance companies, which operate in the segment of the agricultural insurance. This will contribute to strengthening the competitive position of the insurer in the market and expand its capacity to provide insurance coverage to farmers.

4. The process of formation of favorable insurance environment in agriculture involves the development and use of innovative insurance products. Primarily it means index-based insurance as an innovative way against the systemic risk. The main advantage of using an index cover is that the index is adjusted and accurately reflects the actual losses of farmers in the agricultural production. Micro-insurance should be considered in the terms of the food supply security of a country as an innovative tool of agricultural insurance market. The main advantage of micro-insurance in the agricultural sector is the availability of the insurance rates and flexibility of pricing for the insurance services.

5. Reproduction of the competitive model of agricultural insurance market requires consideration and appropriate response of insurers to meet the economic and social farmers’ insurance demands, which should be sufficiently motivated concern-
ing insurance costs. Under this condition, the forms, methods and amount of government support for farmers to get insurance coverage are very important. The experience of the countries with the sustainable agricultural insurance system proves that subsidization of premium may significantly expand the coverage of agricultural insurance. This will give farmers the necessary insurance coverage, and insurers will receive the additional funds for the formation of insurance reserves and the compensation of damages caused by the insurance event.

Further study will be aimed at the research of the optimal models of the innovative agricultural insurance development in Ukraine. There is a need to study ways of forming a favorable institutional environment for a maximum coordination of the economic demands of the insurance business process participants. For said purpose, the possibility of getting synergy effects in the field of the agricultural insurance will be investigated.

References


UKRAINOS ŽEMĖS ŪKIO DRAUDIMO RINKOS FORMAVIMO TEORINIAI IR METODOLOGINIAI PRINCIPAI

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Santrauka

Reikšminiai žodžiai: žemės ūkio draudimas, draudimo rinka, draudimo produktai, rizikos valdymas.

JEL kodai: G15, G22, Q13, Q14.